



THE ASSOCIATION OF NIGERIAN PHYSICIANS IN THE AMERICAS



12th Annual Meeting – Venetian / Palazzo Hotel, Las Vegas

*Emerging Healthcare Technologies to Bridge Gaps between Developing
and Developed Countries*



Presenter:

Okey Okuzu,

Founder/CEO, InStrat Global Health Solutions

July 6, 2012

My Bio

- Economics Undergrad – University of Lagos
- Late 80s to mid 90s: Banking and Finance
 - Notably JP Morgan Chase; Ecobank West Africa
- 1996: MBA - Columbia
- Mid 90s – 2000s: Life Sciences/Big Pharma
 - Pfizer, Novartis
 - Strategy, Innovation, Technology
- 2010s: InStrat Global Health Solutions

Evolution of Healthcare in Nigeria: A Walk Down Memory Lane

Evolution of Healthcare...

Our healthcare delivery model from a long time ago!

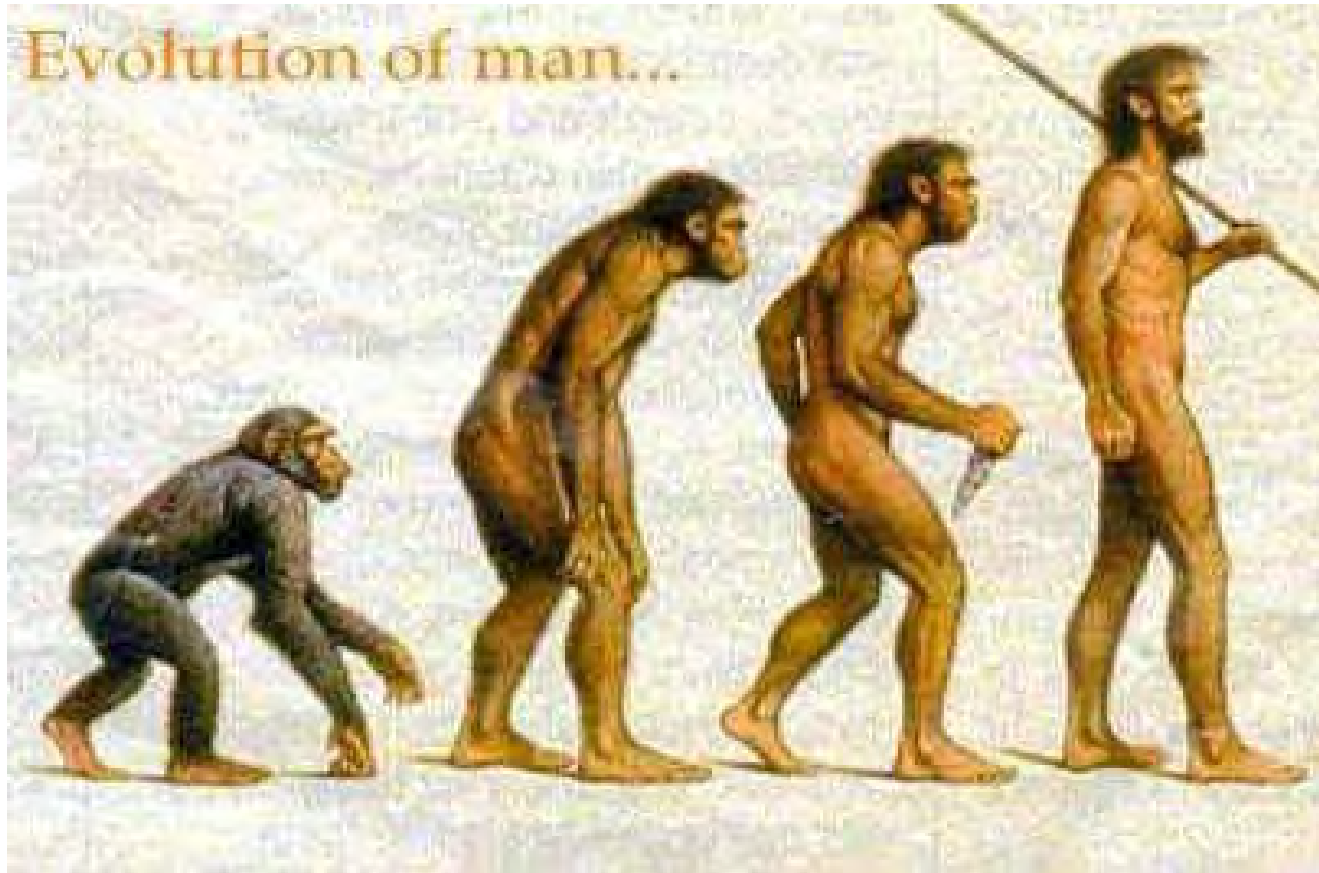


Clinic...

Doctor...



We have made some progress since ... ‘a long time ago...’



Developments have been made over time but delivery gaps still persist – especially with Infrastructure and Technology



THIS IS THE ADMISSION WARD, FLOOR. INSIDE THE HEALTH CENTER, ALL THE FLOORS ARE BROKEN

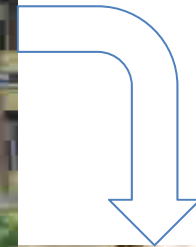


DELIVERY WARD



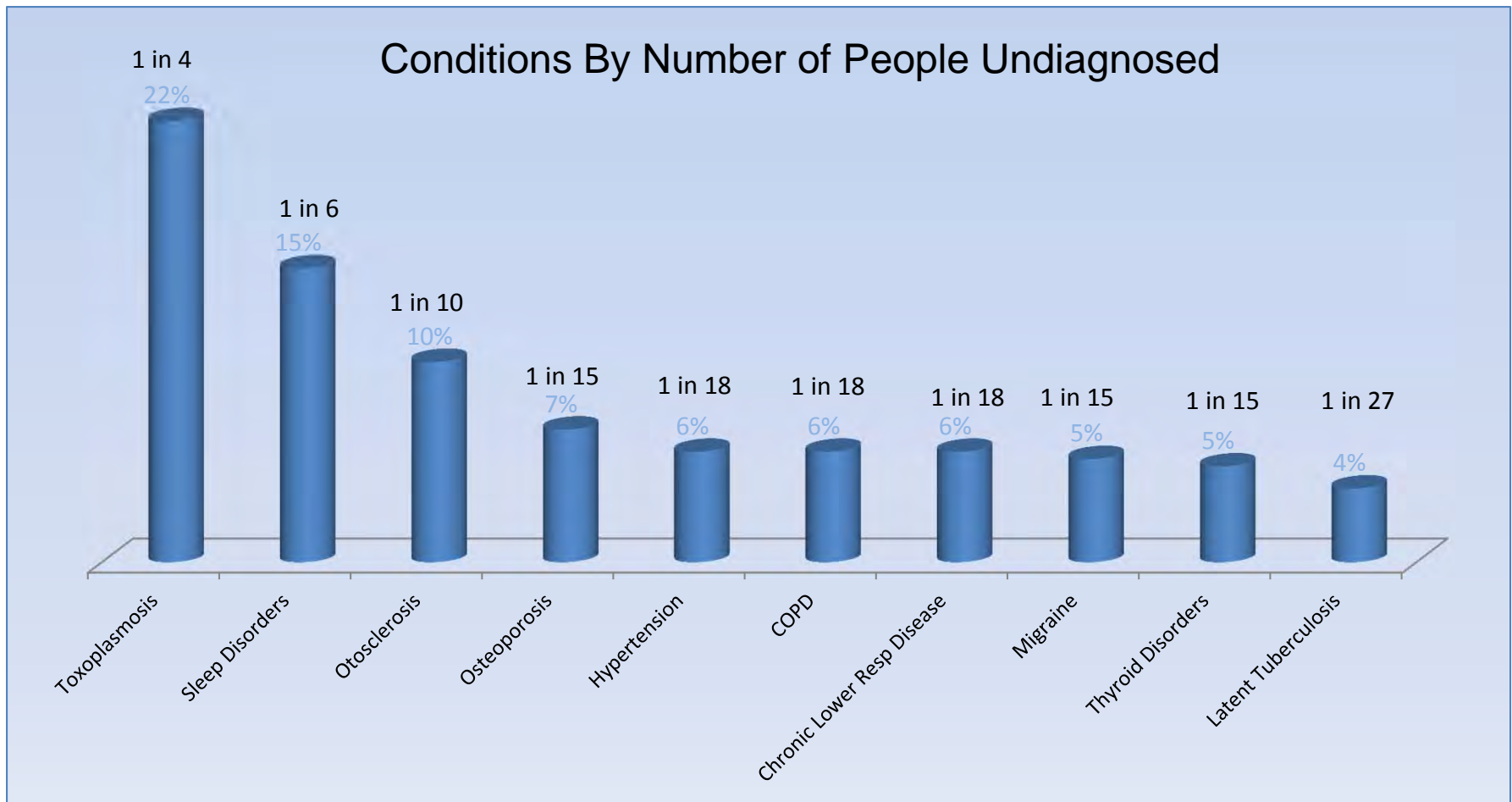
THESE ARE THE BENCH/ CHAIRS KEPT IN THE WAITING ROOM FOR PATIENTS.

Urban healthcare facilities are an attempt to bridge the Infrastructure gap ... but Technology gaps still remain ...



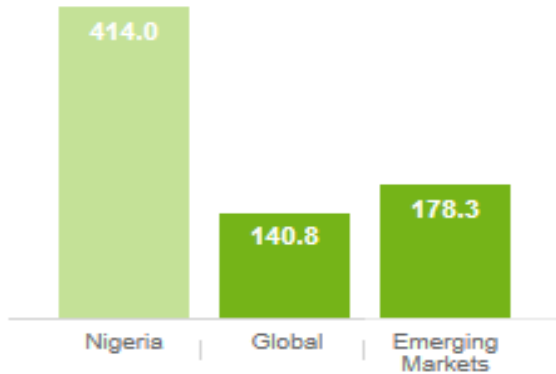
... Contributing to a lack of information that leads to misdiagnoses

- Data from US Population (Chart used for illustrative purposes only)
- Diagnoses rates significantly lower in Nigeria



Which in turn has contributed to dismal health outcomes

▼ Adult mortality rate (per 100,000, age 15-60)



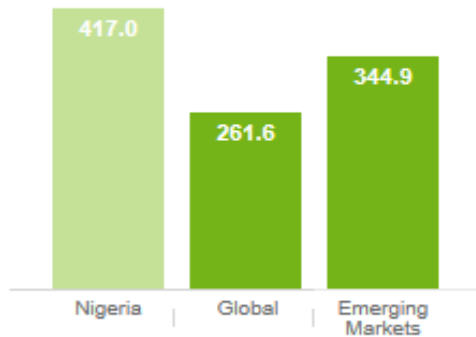
Source: World Health Organisation (2007)

▼ Cancer mortality rate (per 100,000, all ages)



Source: World Health Organisation (2004)

▼ Cardiovascular disease mortality rate (per 100,000, all ages)



Source: World Health Organisation (2004)

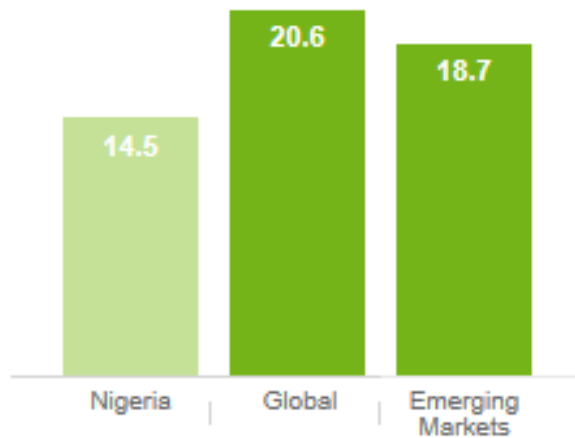
▼ Infant mortality rate (per 100,000, age 0-1)



Source: World Health Organisation (2007)

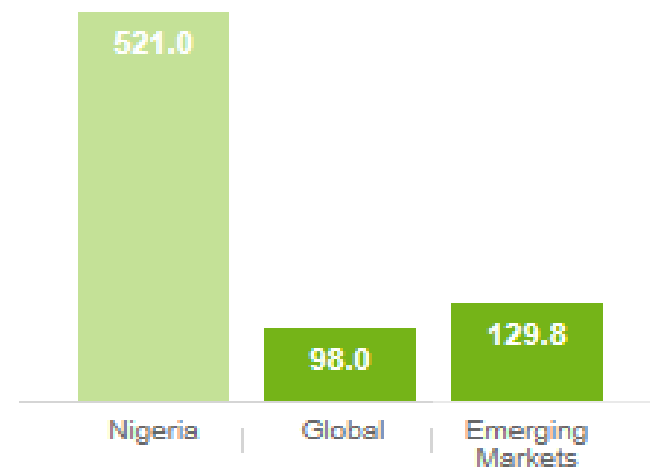
Which in turn has contributed to dismal health outcomes

▼ Life expectancy at age 60 (years)



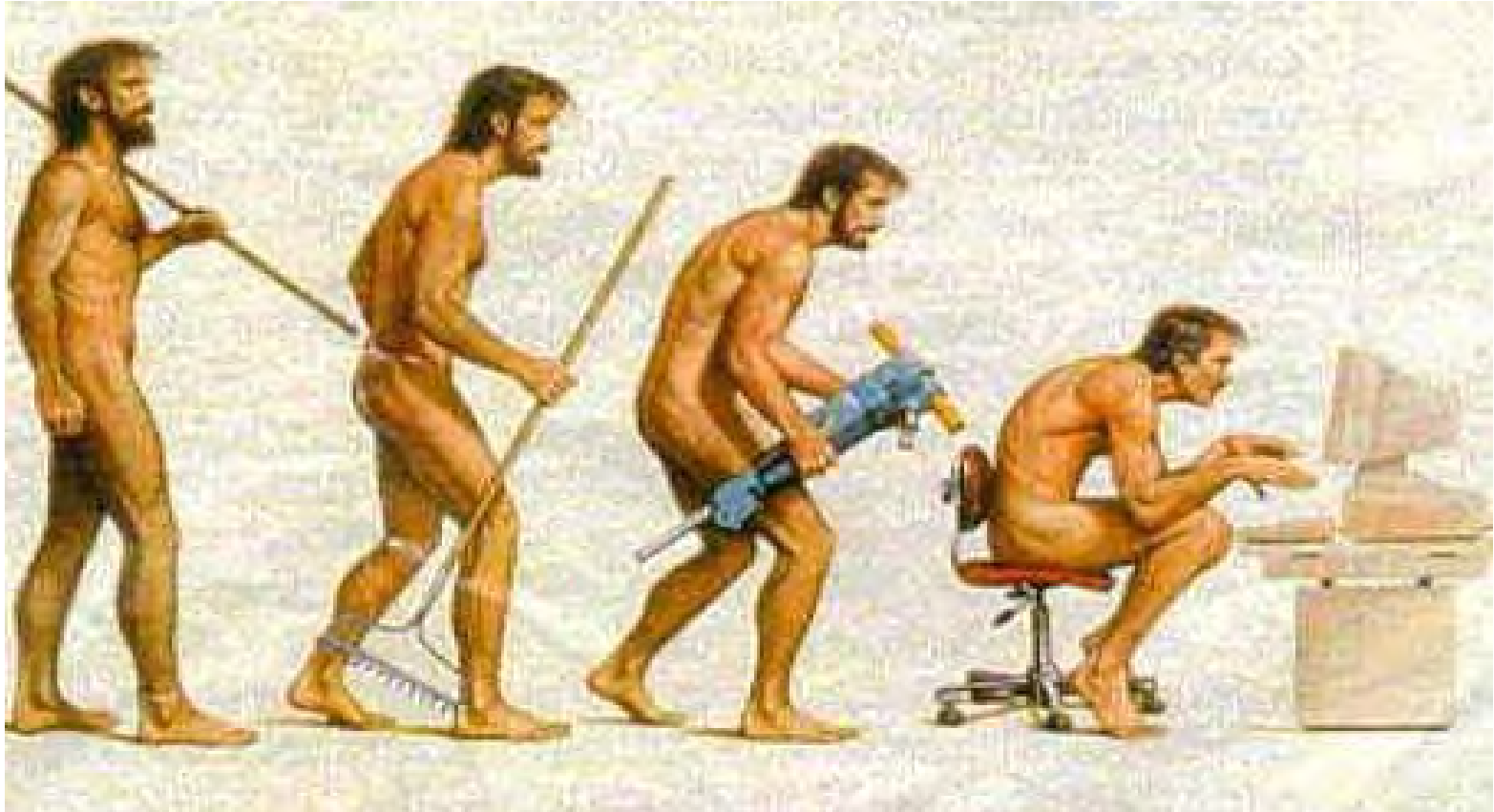
Source: World Health Organisation (2006)

▼ Incidence of tuberculosis (per 100,000, all ages)



Source: World Health Organisation (2007)

Evolution of man... complete transition



Platforms have become available to start to bridge Technology gaps



Recent technology trends have created platforms to bridge gaps in health delivery between developed and developing countries

Relevant Technology Trends

- Availability of the Internet
 - including mobile-internet
- Advent of nano-technologies
 - Smaller and easier to deploy hardware
 - Much less expensive
- Implementation of wireless data technologies
 - Edge, 3-G, wifi
 - Enables sophisticated applications – such as mobile email and web browsing
- Rapid cell/smart phone penetration
 - Even in rural areas
- Rapid adoption of SMS technology



Healthcare Applications

- Education and Awareness
- Remote Data Collection
- Remote Monitoring
- Communication and Training for Health Workers
- Disease and Epidemic Outbreak Tracking
- Diagnostic and Treatment Support

Examples of mHealth interventions

Health services	Description of mHealth usage and applications	Example Cases
<p>1</p> <p>Data Collection / Disease Surveillance</p>	<p>Usage of mobile handheld devices to collect data remotely (e.g., by community health workers); additionally, use of remote diagnostic tools for disease surveillance and treatment; includes civic participation in reporting outbreaks and disease information</p>	
<p>2</p> <p>Treatment Adherence / Appointment Reminders</p>	<p>Utilization of messages and voice to communicate treatment and procedural reminders to patients (e.g., automated SMS reminders to patients on chronic medication)</p>	
<p>3</p> <p>Emergency Medical Response Systems</p>	<p>Emergency response tools, including creation of EMR via mobile phones, and ambulance services whose reach is extended with mobile usage in remote areas</p>	
<p>4</p> <p>Health Information Systems & Support Tools for Health Workers</p>	<p>Collection and analysis of patient data, particularly at clinics or related to call centers that are used to triage services and treatment; information to help health worker prioritization; information on inventory (<i>Note: overlaps with supply chain management</i>)</p>	
<p>5</p> <p>Supply Chain Management</p>	<p>Management of inventory and supply chain steps by mobile tracking and communication; includes advocacy informed by supply chain information</p>	
<p>6</p> <p>Health Financing</p>	<p>Use of smart-cards, vouchers, insurance and lending for health services linked to mobile platforms (e.g., m-Pesa) or otherwise enabled using mobile</p>	
<p>7</p> <p>Disease Prevention and Health Promotion</p>	<p>Use of mobile and SMS-based health information and education to inform individual patients of preventive care and treatment</p>	

Instrat was created to take advantage of some of these opportunities

- **Philosophy:** Instrat believes that **new health technology platforms** and solutions present an **opportunity** for emerging markets and **developing countries to** overcome decades of evolution in healthcare delivery and to **offer their** urban and rural **populations modern** and effective **healthcare**
- **Aim:** Instrat's aim is to **leverage appropriate health technologies** to drive improved healthcare delivery in emerging markets and developing countries **thereby saving lives**
- **Strategy:** Instrat develops proprietary health technologies and partners with global health technology providers to offer compelling turnkey healthcare solutions to Governments, Multilateral Organizations, Foundations and NGOs and private sector healthcare providers

InStrat's Offerings Illustrate What is Possible...

■ SMS Remote Patient Monitoring and Messaging

- Patients with Chronic Diseases text health data to number provided
- System monitors numbers and alerts Doctor by SMS if there is a problem
- Also delivers health and wellness messages by SMS
- Applications for Hypertension, Diabetes, HIV/AIDS, Asthma, Pregnancy Management

■ Mobile Electronic Health Assessment

- Smart Phone/tablet based electronic health assessment tool
- Directs community and rural health workers on complaints capture; and assists in diagnoses and treatment determination.
- Data is transmitted to a remote server and for analysis and e-consults with physicians anywhere in the world

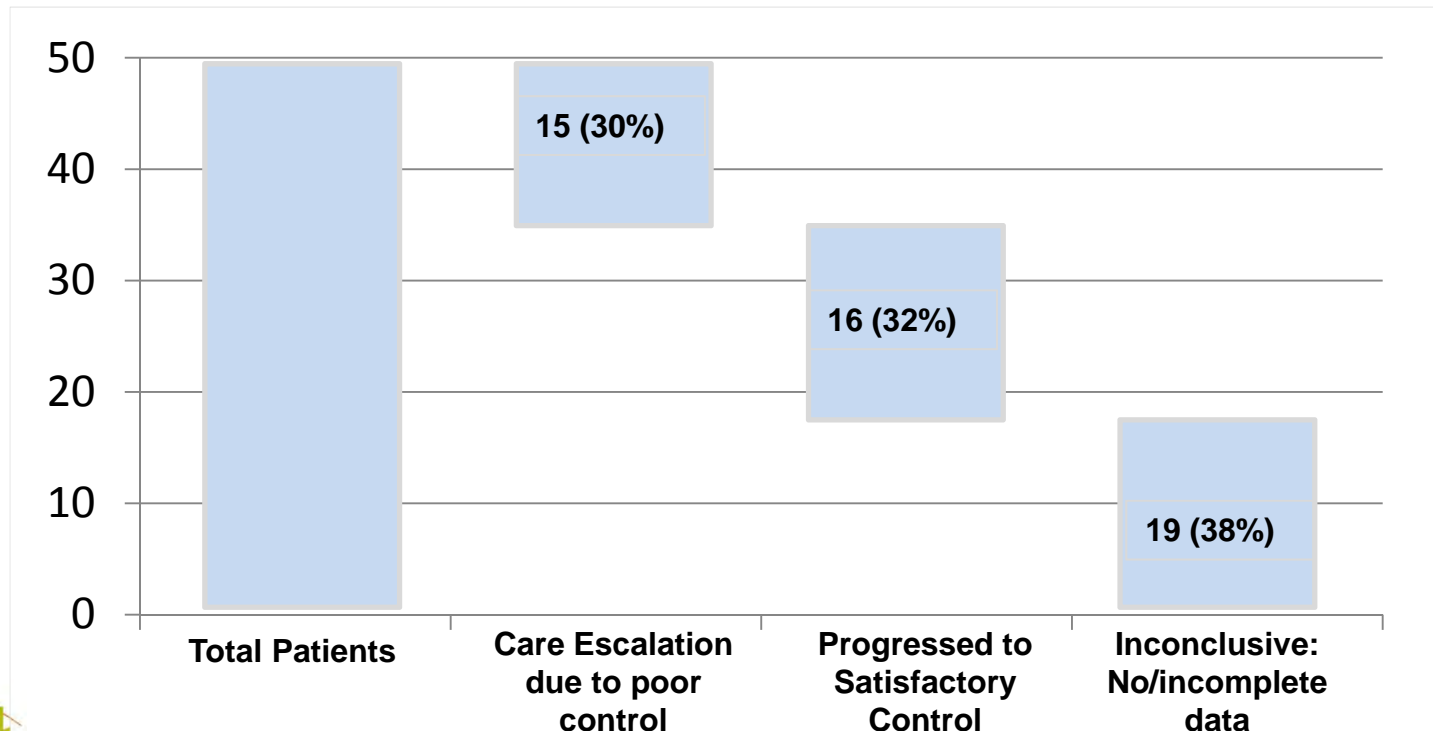
■ Hospital Management Systems

- Integrated web based Hospital Management Systems with Electronic Health Records applications suited for hospitals



2011 Remote Patient Monitoring Pilot showed impressive results

- **Sponsor:** - Nigerian Breweries PLC
- **Patient Profile:** - Full time employees across 7 manufacturing sites diagnosed with moderate/severe hypertension and diabetes
- **Monitoring:** - Blood Pressure and Blood Glucose reading captured twice weekly
- **Results:**
 - 15 patients remained poorly controlled and their care was escalated
 - 16 patients progressed to satisfactory enough control that the company chose to drop them from coverage (replaced them in the continued service)
 - 19 patients had data issues (infrequent readings; network issues, etc.)





***OneWorldDr* Medical Services**

Remote Monitoring Services Patient Testimonials



InStrat Global Health Solutions

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CliniPAK Mobile Electronic Health Assessment tool will be used by NPHCDA'S midwives to care for rural pregnant women

**Step 1:
Demographics ,
Medical History
Capture**



**Step 2:
Complaint
Selection**



**Step 3:
Diagnoses
Selection**



**Step 4:
Treatment
Selection**

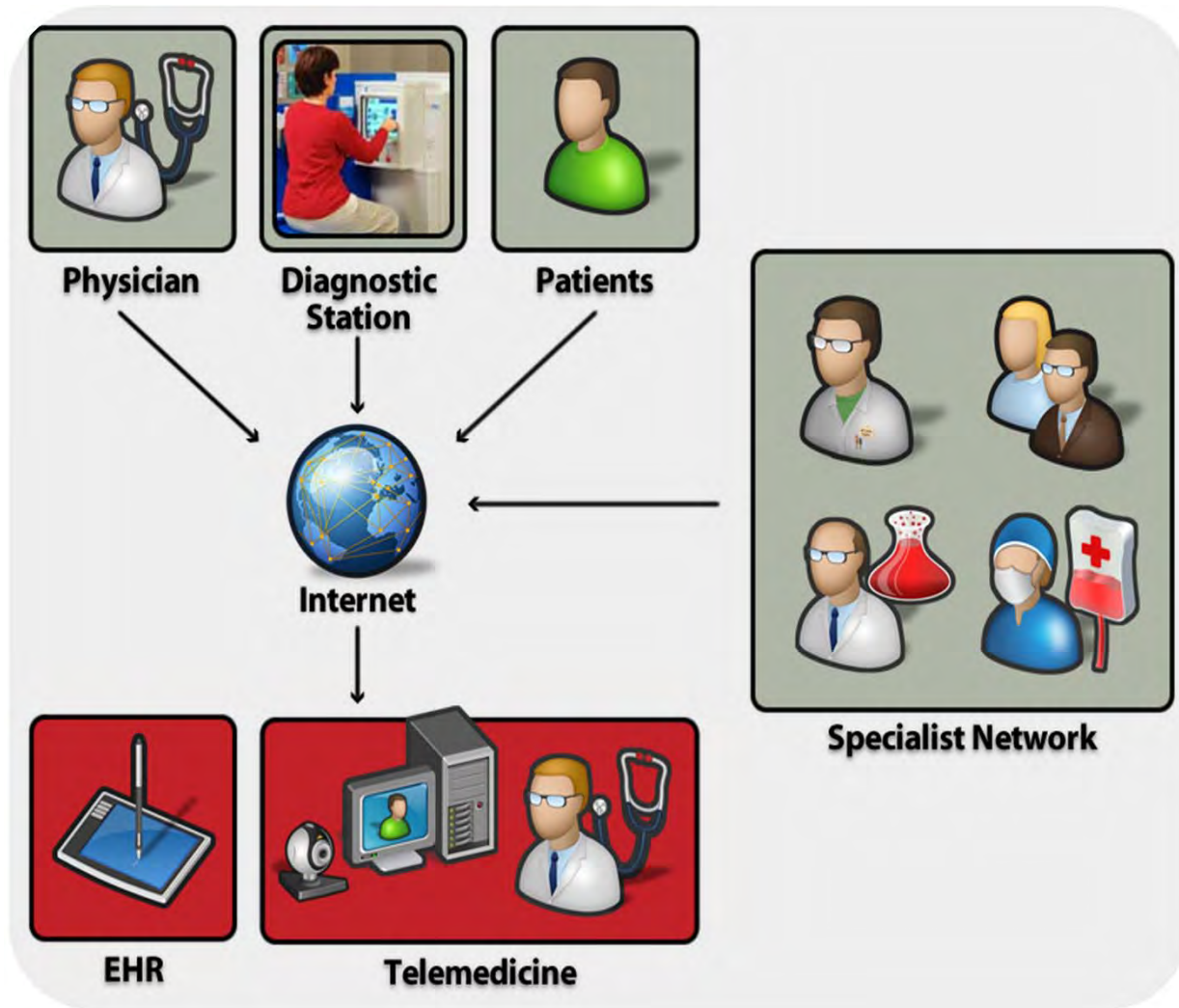


- All information gets relayed to Central server and can be accessed by phone or desktop
- Will be used for Maternal Death Notification and Review
- Being scaled across 1,000 Primary Health Centers

ANPA is deeply committed to the advancement of health in Nigeria

- Strategic partnerships with governmental and non-governmental agencies in North America and Nigeria
- Signed MoUs with to provide technical assistance to the health sector.
 - Federal Ministry of Health of Nigeria (FMoH)
 - National Primary Healthcare Development Agency (NPHCDA)
- ANPA/FMoH MoU focuses on five areas
 - Education and Training
 - Health-related Research
 - Service delivery and skills transfer
 - Quality Assurance in Healthcare delivery
 - Private Sector Investments in the Health Sector (including Public Private Partnerships PPP and Private Investments).
- Also, partnered with USAID to reform medical curriculum in Nigerian medical schools

RemDAS (an InStrat Collaboration) has developed a Telemedicine Platform that ANPA can leverage to accomplish its collaborative goals

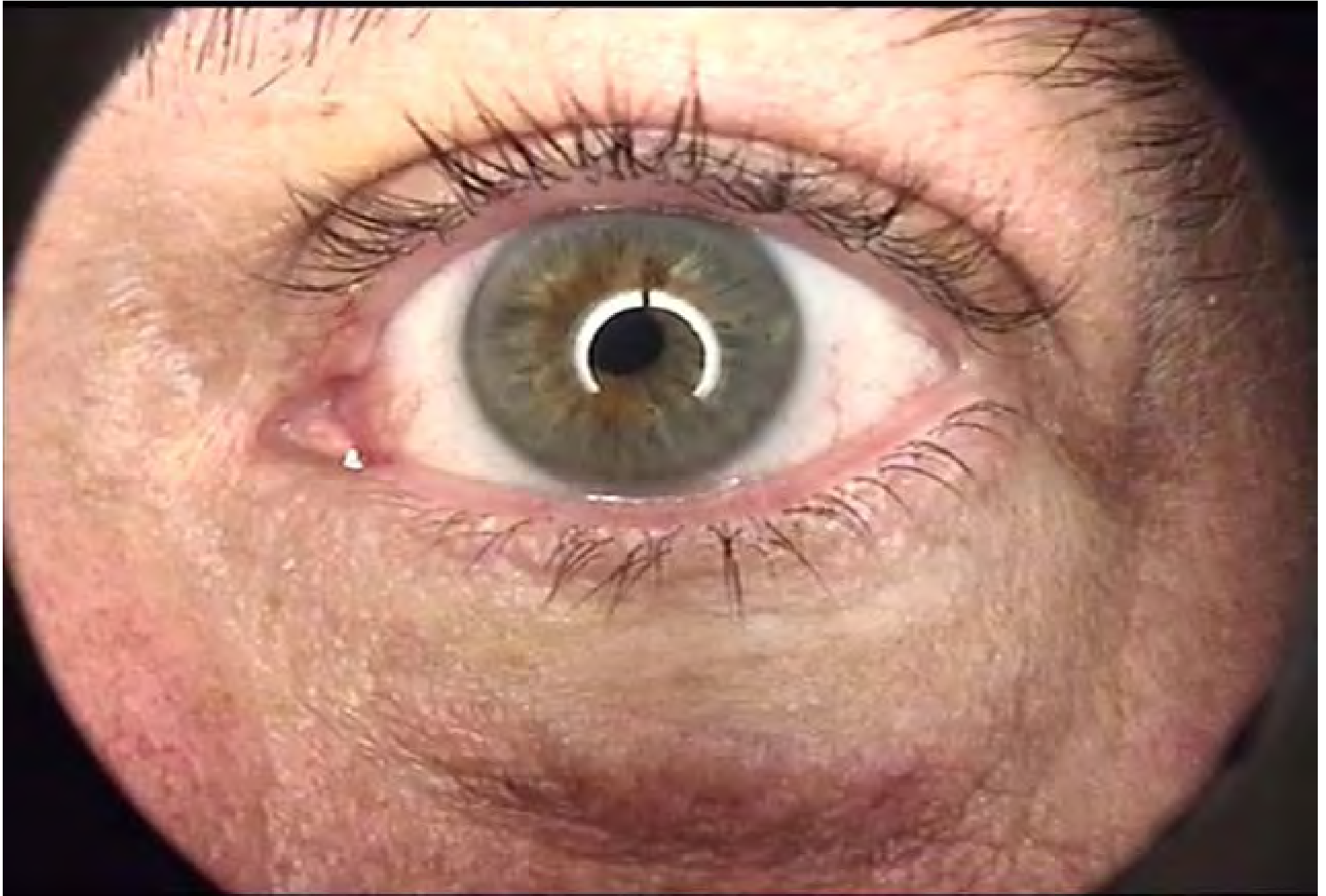


- Successful Proof of concept Conducted in May 2012
- Pilot is currently in Development
- Commercial Focus will be on:
 - Telemedicine
 - Remote Diagnostics
 - Distance Learning

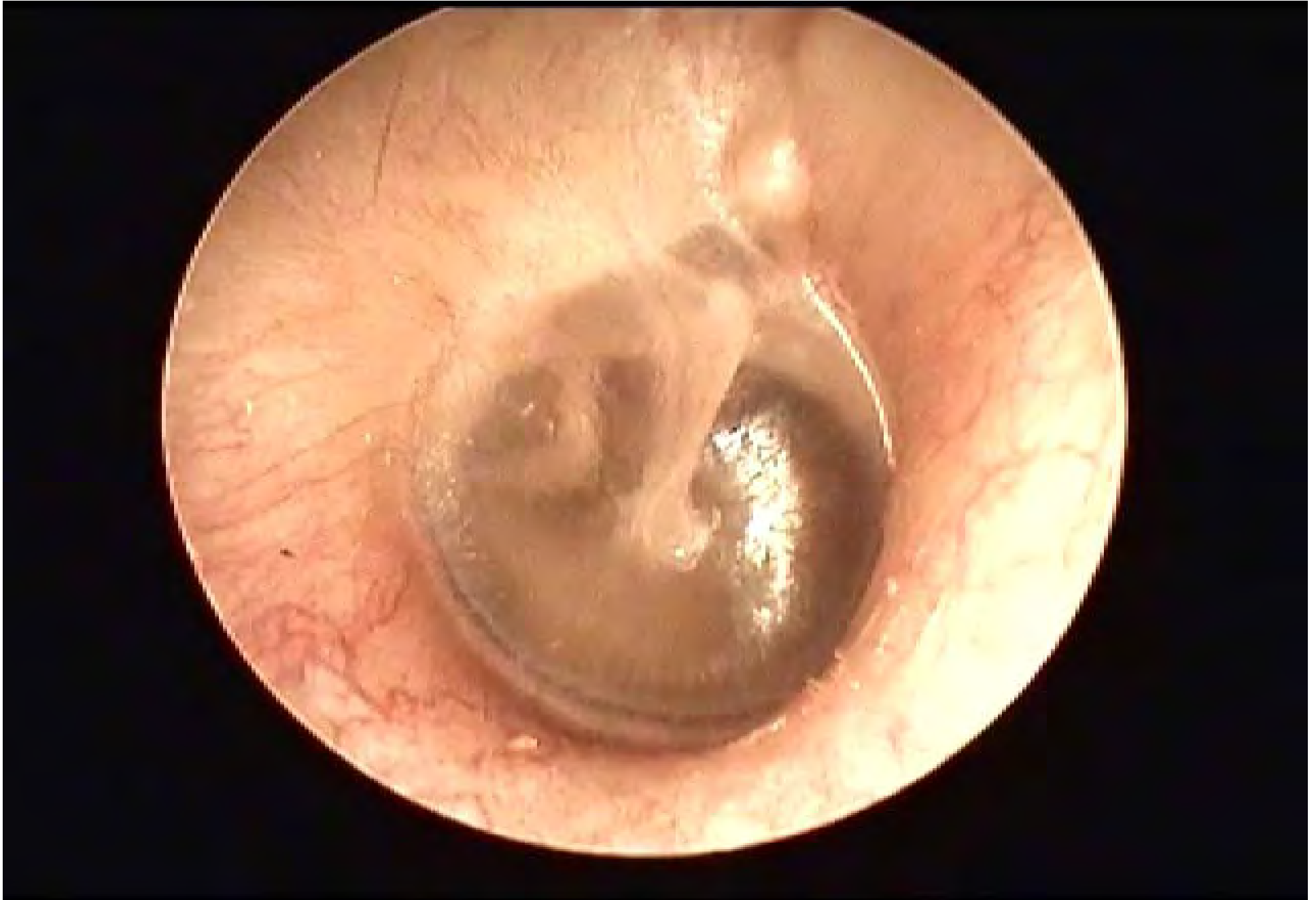
Telemedicine Proof of Concept

- Images recorded from Live Demonstration Session – May 23 2012
 - Host: Cambridge MA
 - Local Station: Abuja, Nigeria
 - Local Technology Needed: Web Browser; Internet Connection
 - Wireless: MTN Mobile Broadband

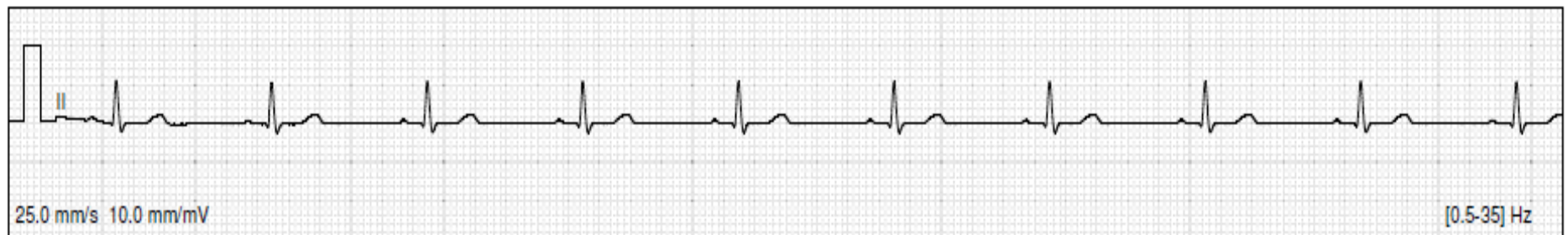
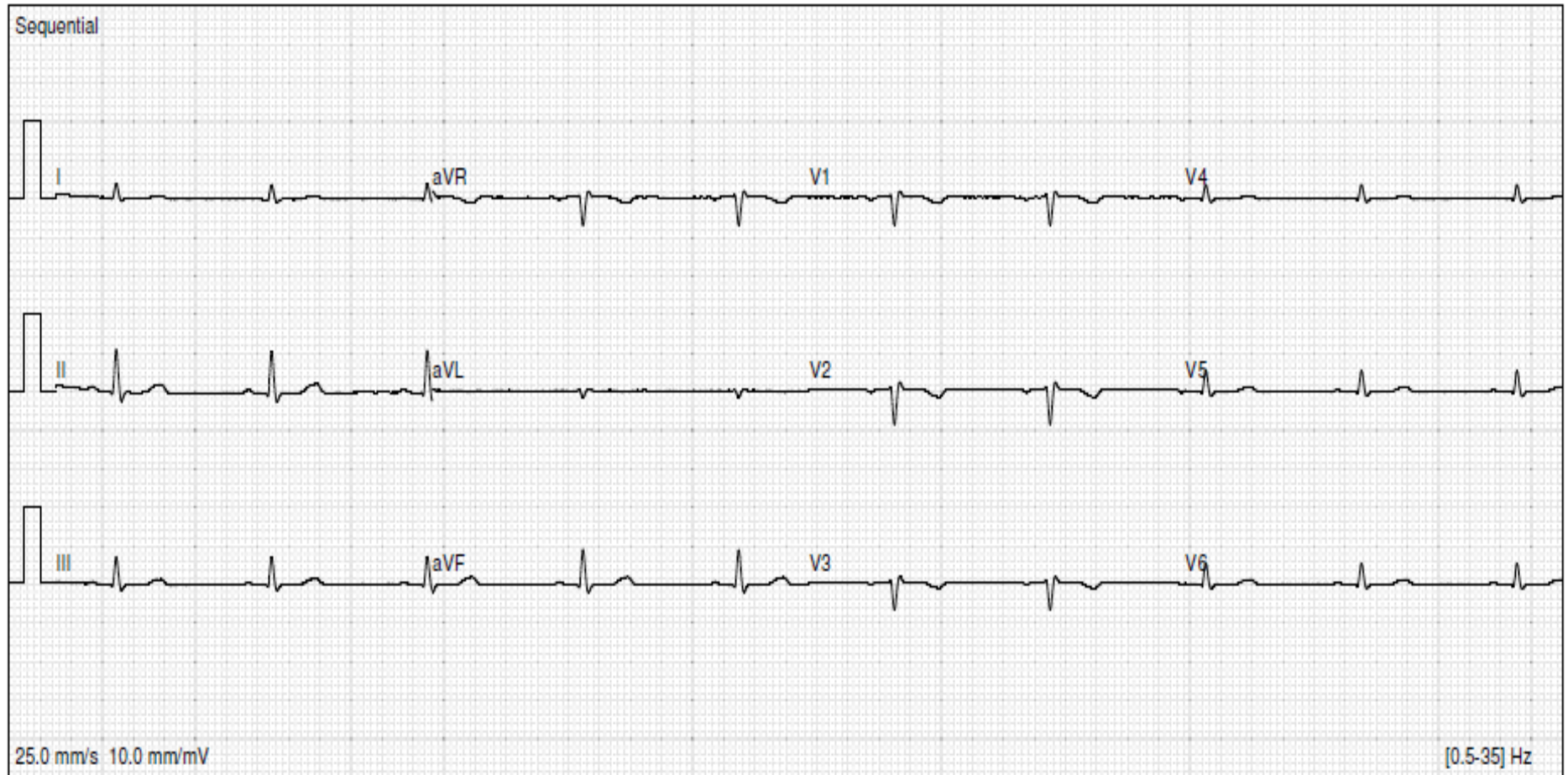
Images recorded during live tele demonstration between US and Nigeria – May 23rd 2012



Images recorded during live tele demonstration between US and Nigeria – May 23rd 2012



Images recorded during live tele demonstration between US and Nigeria – May 23rd 2012



How Can ANPA Get Involved?

- Telemed platform supports ALL of ANPA/FMoH focus areas
 - Education and Training
 - Health-related Research
 - Service delivery and skills transfer
 - Quality Assurance in Healthcare delivery
 - Private Sector Investments in the Health Sector (including Public Private Partnerships PPP and Private Investments).
- InStrat will enter into dialogue with ANPA Leadership for strategic partnership to leverage Telemedicine platform to advance the collaboration
- Opportunities exist to partner with individual members as well as the with Organization
 - Telmed Deployment site in Nigeria
 - Membership of the diaspora specialist network

Questions

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